



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/651,459	08/29/2003	Uri Elzur	13784US02	8761

7590 08/02/2005

Christopher C Winslade
McAndrews Held & Malloy Ltd
500 West Madison St
34Th Floor
Chicago, IL 60661

EXAMINER

NGUYEN, BRIAN D

ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/651,459

Applicant(s)

ELZUR, URI

Examiner

Brian D. Nguyen

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-29 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/12/04 & 4/29/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. NOTE: The term “adapted to” is not positively recited limitation. Therefore, all the limitations followed that term are not considered the claimed limitations. If applicant would like to claim these limitations, the applicant is suggested to delete that term from the claims.

Specification

2. The applicant is requested to fill in the blanks on pages 1, 12, 13, and 19 of the specification.

Claim Objections

3. Claims 1-16 and 27-29 are objected to because of the following informalities:

Claim 1, line 1, it is suggested to insert --the steps of-- after “comprising”.

Claims 5 and 29, line 2, it is suggested to replace “NIC” with --network interface card (NIC)--.

Claim 6, line 1, it is suggested to insert --step-- after “wherein”.

Claim 9, line 1, it is suggested to insert --step-- after “wherein”.

Claim 14, line 1, it is suggested to insert --step-- after “wherein”.

Claims 27-29, line 1, it is suggested to replace “method” with --system--.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2661

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 4-12, and 14-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Mallory (2002/0034182).

Regarding claim 1, Mallory discloses a method for handling out-of-order frames, comprising: (a) receiving an out-of-order frame via a network subsystem; (b) placing data of the out-of-order frame in a host memory (buffer); and (c) managing information relating to one or more holes (gaps) in a receive window (sliding window) (see paragraph 0011 for storing out-of-order frame and paragraphs 0060 and 0141 for holes and window).

Regarding claim 4, Mallory discloses the subsystem does not store one or more missing frames relating to the out-of-order frame (see, for example, figure 10 where bad, duplicate, or too old frames are dropped/not store).

Regarding claim 5, Mallory discloses network interface card (NIC) in figure 14 and paragraph 0145. Hayes shows NIC in figure 2.

Regarding claims 6-8, Mallory discloses placing the data of the out-of-order frame in the host memory if the out-of-order frame is determined to be inside the receive window and dropping the out-of-order frame if the out-of-order frame is determined not to be inside the receive window (see, for example, paragraphs 0057-0058 and figure 10 where Mallory teaches dropping or storing frames based on the age of the sequence number. Note that the too old sequence number is outside the receive window).

Regarding claims 9 and 10, Mallory discloses storing information (state information) relating to a new hole created by the placement of the data of the out-of-order frame wherein the

Art Unit: 2661

stored information resides on the network subsystem (see status table 122 in figure 4 and paragraph 0074).

Regarding claim 11, Mallory discloses the managed information resides on the network subsystem (see status table 122 in figure 4).

Regarding claim 12, Mallory discloses updating the window (see paragraph 0140).

Regarding claim 14, Mallory discloses mapping TCP space into host buffer space (see, for example, reorder buffer 120 in figure 4 where received TCP frames are stored (mapped) in the reorder buffer).

Regarding claim 15, Mallory discloses a memory whose memory usage scales with a number of holes in the receive window (see, for example, paragraphs 0059-0040 where Mallory teaches of buffering frames following a hole (gap) in a reorder buffer. Therefore, the memory usage in the reorder buffer must scale with a number of holes).

Regarding claim 16, Mallory discloses a memory whose memory usage does not scale with a number of out-of-order frames received (see, for example, paragraph 0063 where Mallory teaches checking the frame to determine if it is a reminder control frame. If it is, the frame is dropped. The reminder control frame that is an out-of-order frame and is dropped while the out-of-order data frames are stored in the reorder buffer. Therefore, the memory usage does not scale with a number of out-of-order frames received).

Regarding claims 17-22, Mallory discloses a method for handling out-of-order frames, comprising: parsing an out-of-order frame into control information and data information (see, for example, table 1 in page 4 and figures 6, 7, or 8 where the control bit (Ctl) specifies whether the frame is a control information frame or a data information frame); processing at least one of the

Art Unit: 2661

control information, the data information and context information to determine a buffer location in a host memory in which to place the data information (see paragraph 0011 where out-of-order frames are stored in the buffer); and managing receive window hole information, wherein the receive window hole information comprises TCP receive window hole information (see, for example, slide window in paragraphs 0140-0141).

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 23-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Hayes (2003/0046330).

Regarding claims 23-29, Hayes discloses a system comprising: a host (C) comprising a host memory (M); and a network subsystem (NIC) coupled to the host via a host interface (B); wherein the network subsystem comprises a TCP offload engine (TOE) (see offloading, for example, in the abstract), wherein the data is placed in a temporary buffer (memory M is a temporary buffer), wherein the network subsystem comprises a NIC (see figure 2).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2661

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mallory in view of Hayes.

Regarding claim 2, Mallory does not specifically disclose the out-of-order frame is received via a TCP offload engine (TOE) of the network subsystem or a TCP-enabled Ethernet controller (TEEC) of the network subsystem. However, the use of TOE or TEEC is well known in the art. Hayes discloses the use of offload engine (see, for example, offloading in the abstract). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the offload engine as taught by Hayes in the system of Mallory in order to support high bandwidth communications.

Regarding claim 3, Mallory does not specifically disclose the memory/buffer is a onboard or off board memory. However, to use an onboard or off board to store frames is a matter of choice. Hayes explicitly discloses storing frames in memory (M) off from network interface card (NIC) (see figure 2). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to not store on an onboard memory as taught by Hayes in the system of Mallory in order to reduce the size of the onboard memory.

Allowable Subject Matter

10. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

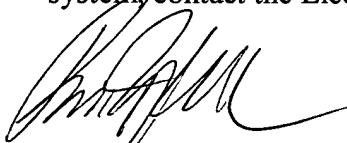
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mitchell et al (2002/0191604) and Zsohar (2002/0194445).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian D. Nguyen whose telephone number is (571) 272-3084. The examiner can normally be reached on 7:30-6:00 Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571) 272-3126. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



7/28/05

BRIAN NGUYEN
PRIMARY EXAMINER